

MANUAL MOTOR STARTERS



Meta-MEC Combines Overload, Phase Loss, and Short Circuit Protection in one inexpensive and versatile device.

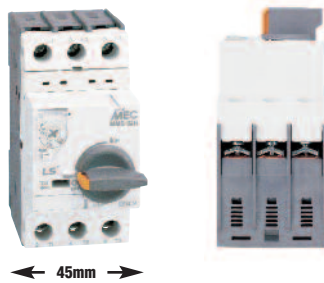
- High interrupt capacity (65kA@480V SCCR, most models)
- Din rail and surface mounting
- Lockable handle (OFF position)
- IP20 finger safe terminals
- Class 10 thermal overload protection
- Trip test feature
- Phase loss protection
- Complies with IEC 60947-2 and IEC 60947-4-1 UL508 (Manual motor controller) UL508 (Combination motor controller starter) CSA C22.2 NO.14 GB14048



from **\$35**



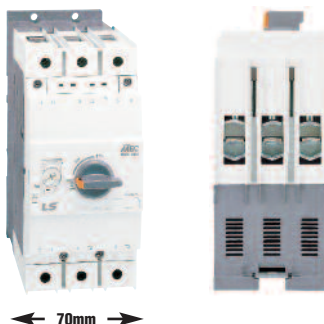
MMS-32H Frame



MMS-63H Frame



MMS-100H Frame

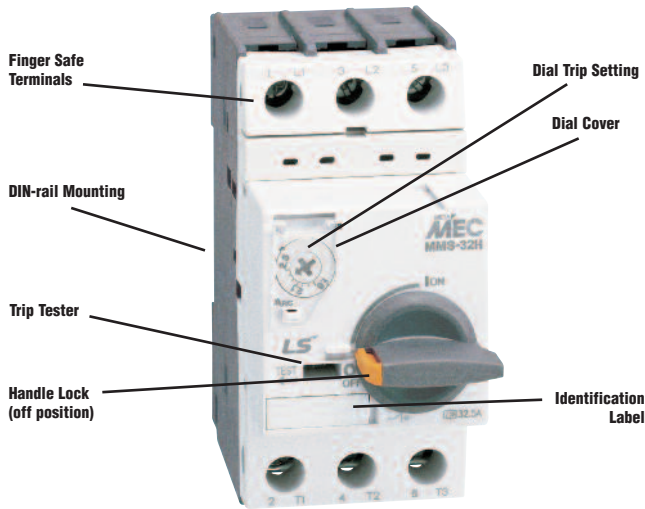


Part Number	Price	UL HP Ratings						Thermal Adjustable Range (A)	Short Circuit Current Rating (SCCR)		
		Single Phase		Three Phase					240V	480V	600V
		115V	230V	200V	230V	460V	575V				
32 Amp Frame											
MMS-32H-0.16A	\$35	-	-	-	-	-	-	0.1 - 0.16A	100kA	65kA	25kA
MMS-32H-0.25A	\$36	-	-	-	-	-	-	0.16 - 0.25A	100kA	65kA	25kA
MMS-32H-0.4A	\$36	-	-	-	-	-	-	0.25 - 0.4A	100kA	65kA	25kA
MMS-32H-0.63A	\$36	-	-	-	-	-	-	0.4 - 0.63A	100kA	65kA	25kA
MMS-32H-1A	\$36	-	-	-	-	-	1/2	0.63 - 1.0A	100kA	65kA	25kA
MMS-32H-1.6A	\$39	-	1/10	-	-	3/4	3/4	1.0 - 1.6A	100kA	65kA	25kA
MMS-32H-2.5A	\$39	-	1/6	1/2	1/2	1	1-1/2	1.6 - 2.5A	100kA	65kA	25kA
MMS-32H-4A	\$42	1/8	1/3	3/4	3/4	2	3	2.5 - 4.0A	100kA	65kA	25kA
MMS-32H-6A	\$42	1/4	1/2	1	1-1/2	3	5	4 - 6A	100kA	65kA	25kA
MMS-32H-8A	\$42	1/3	1	2	2	5	5	5 - 8A	100kA	65kA	25kA
MMS-32H-10A	\$42	1/2	1-1/2	2	3	5	7-1/2	6 - 10A	100kA	65kA	25kA
MMS-32H-13A	\$42	1/2	2	3	3	7-1/2	10	9 - 13A	100kA	65kA	25kA
MMS-32H-17A	\$42	1	3	3	5	10	15	11 - 17A	100kA	30kA	10kA
MMS-32H-22A	\$42	1-1/2	3	5	7-1/2	15	20	14 - 22A	100kA	30kA	10kA
MMS-32H-26A	\$42	2	3	7-1/2	7-1/2	15	20	18 - 26A	100kA	30kA	10kA
MMS-32H-32A	\$42	2	5	7-1/2	10	20	30	22 - 32A	100kA	30kA	10kA
MMS-32H-40A	\$42	3	7-1/2	10	10	30	30	28 - 40A	100kA	30kA	10kA
63 Amp Frame											
MMS-63H-17A	\$98	1	3	3	5	10	15	11 - 17A	100kA	50kA	10kA
MMS-63H-22A	\$98	1-1/2	3	5	7-1/2	15	20	14 - 22A	100kA	50kA	10kA
MMS-63H-26A	\$112	2	3	7-1/2	7-1/2	15	20	18 - 26A	100kA	50kA	10kA
MMS-63H-32A	\$112	2	5	7-1/2	10	20	30	22 - 32A	100kA	50kA	10kA
MMS-63H-40A	\$112	3	7-1/2	10	10	30	30	28 - 40A	100kA	50kA	10kA
MMS-63H-50A	\$124	3	10	15	15	30	40	34 - 50A	100kA	50kA	10kA
MMS-63H-63A	\$124	5	10	20	20	40	60	45 - 63A	100kA	50kA	10kA
100 Amp Frame											
MMS-100H-75A	\$199	5	15	20	25	50	60	55 - 75A	100kA	50kA	10kA
MMS-100H-90A	\$199	7-1/2	20	25	30	60	75	70 - 90A	100kA	50kA	10kA
MMS-100H-100A	\$199	10	20	30	30	75	100	80 - 100A	100kA	50kA	10kA

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Manual Motor Starters (cont'd)

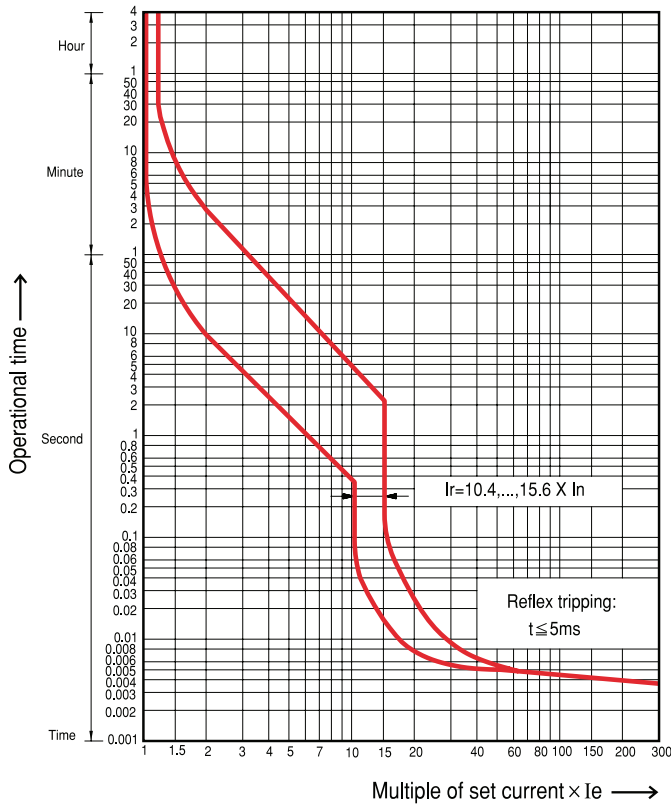


General Specifications

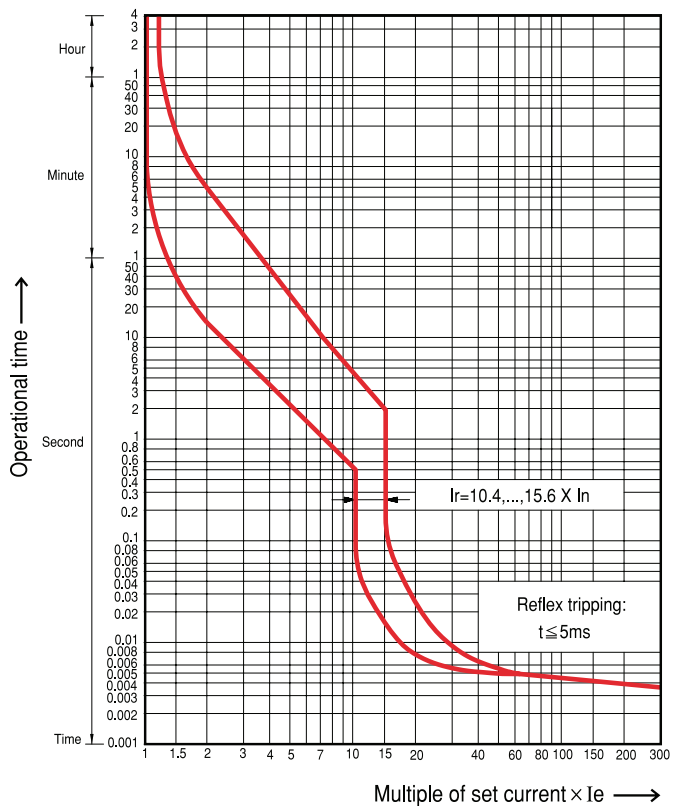
Standards	Underwriters Laboratories - UL 508; CSA C22.2 IEC 60947-2 & IEC 60947-4-1 Compliance
Rated Operational Voltage (Ue)	Up to 690V
Rated Frequency	50/60Hz
Rated Insulation Voltage (Ui)	32AF: 690V; 63AF - 100AF: 1,000V
Rated Impulse Voltage (Uimp)	32AF: 6kV; 63AF - 100AF: 8kV
Utilization Category	IEC 60 947-2 (Breaker): Cat. A; IEC 60 947-4 (Motor starter) AC 3
Mechanical Endurance (Operations)	32AF: 100,000; 63AF - 100AF: 50,000
Electrical Endurance (Operations)	32AF: 100,000; 63AF - 100AF: 25,000
Max Operating Frequency	25 operations/hour
Operating Temperature	-20°C (-4°F) to +60°C (140°F)
Storage Temperature	-50°C (-58°F) to +80°C (176°F)
Phase Loss Protection	Yes
Degree of protection	IP20
Resistance to Shock	25g
Resistance to Vibration	5 - 150Hz
Terminal Capacity	32AF: 1 or 2 x (18 - 10 AWG); 63AF: 1 x (18 - 2 AWG) or 2 x (18 - 4 AWG); 100AF: 1 x (12 - 2/0 AWG) or 2 x (12 - 1/0 AWG)
Tightening Torque	32AF: .8 - 2.5 Nm (7-22lb-in); 63AF: 3 - 4.5 Nm (26 - 39lb-in); 100AF: 4 - 6 Nm (35 - 53lb-in)

Trip Characteristics

MMS-32



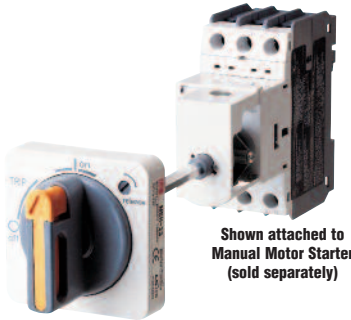
MMS-63, 100



Manual Motor Starter Accessories

Extended Rotary Handle

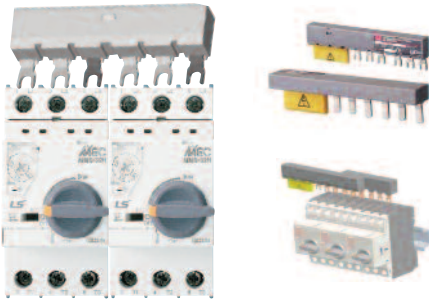
- NEMA 12, IP65 rating
- Available with 115mm (4.53") or 315mm (12.4") shaft lengths



Shown attached to Manual Motor Starter (sold separately)

MMS Bus Bars

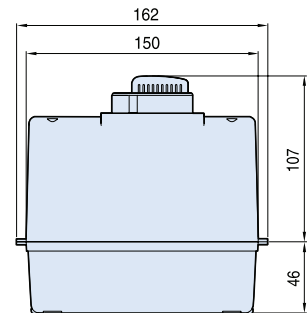
- For parallel connection with MMS power terminals
- Simplifies wiring and reduces wiring space
- Multiple bus bars can be combined providing total current rating is not exceed



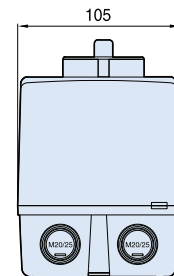
Part Number	Description	Price
MMS-FX-11	Auxiliary Contacts, front mounting, 1 N.O., 1 N.C.	\$8
MMS-FX-20	Auxiliary Contacts, front mounting, 2 N.O.	\$8
MMS-FX-02	Auxiliary Contacts, front mounting, 2 N.C.	\$8
MMS-LX-11	Auxiliary Contacts, side mounting, 1 N.O., 1N.C.	\$12
MMS-LX-20	Auxiliary Contacts, side mounting, 2 N.O.	\$12
MMS-LX-02	Auxiliary Contacts, side mounting, 2 N.C.	\$12
MMS-LA	Alarm Switch, signals all faults, side mounting, 1N.O., 1N.C.	\$12
MMS-LAM	Magnetic Trip Alarm Switch, signals magnetic trip only, side mounting, 1N.O., 1N.C. contact	\$12
MMS-RS-28	Shunt Release, side mounting, 24V/50Hz, 28V/60Hz	\$19
MMS-RS-120	Shunt Release, side mounting, 110V/50Hz, 120V/60Hz	\$19
MMS-RS-220	Shunt Release, side mounting, 200V/50Hz, 200-220V/60Hz	\$19
MMS-RS-480	Shunt Release, side mounting, 415-440V/50Hz, 460-480V/60Hz	\$19
MMS-RU-28	Undervoltage Release, side mounting, 24V/50Hz, 28V/60Hz	\$19
MMS-RU-120	Undervoltage Release, side mounting, 110V/50Hz, 120V/60Hz	\$19
MMS-RU-220	Undervoltage Release, side mounting, 200V/50Hz, 200-220V/60Hz	\$19
MMS-RU-480	Undervoltage Release, side mounting, 415-440V/50Hz, 460-480V/60Hz	\$19
MMS-RUX-28	Undervoltage Release with Switch, side mounting, 2 N.O. Contacts, 24V/50Hz, 28V/60Hz	\$24
MMS-RUX-120	Undervoltage Release with Switch, side mounting, 2 N.O. Contacts, 110V/50Hz, 120V/60Hz	\$24
MMS-RUX-220	Undervoltage Release with Switch, side mounting, 2 N.O. Contacts, 200V/50Hz, 200-220V/60Hz	\$24
MMS-RUX-480	Undervoltage Release with Switch, side mounting, 2 N.O. Contacts, 415-440V/50Hz, 460-480V/60Hz	\$24
MMS-MEH32-115	Extended Rotary Handle and shaft, for use with MMS-32H, NEMA12/IP65, 115mm (4.53") shaft length	\$20
MMS-MEH32-315	Extended Rotary Handle and shaft, for use with MMS-32H, NEMA12/IP65, 315mm (12.4") shaft length	\$23
MMS-MEH63-115	Extended Rotary Handle and shaft, for use with MMS-63H, NEMA12/IP65, 115mm (4.53") shaft length	\$20
MMS-MEH63-315	Extended Rotary Handle and shaft, for use with MMS-63H, NEMA12/IP65, 315mm (12.4") shaft length	\$23
MMS-MEH100-115	Extended Rotary Handle and shaft, for use with MMS-100H, NEMA12/IP65, 115mm (4.53") shaft length	\$22
MMS-MEH100-315	Extended Rotary Handle and shaft, for use with MMS-100H, NEMA12/IP65, 315mm (12.4") shaft length	\$25
MMS-PB-322	Phase Bus Bar for 32 Amp Frame, 63 amp maxium current, connects two MMSs	\$8
MMS-PB-323	Phase Bus Bar for 32 Amp Frame, 63 amp maxium current, connects three MMSs	\$9
MMS-PB-632	Phase Bus Bar for 63 Amp Frame, 108 amp maxium current, connects two MMSs	\$9
MMS-PB-633	Phase Bus Bar for 63 Amp Frame, 108 amp maxium current, connects three MMSs	\$11
MMS-EPH32-65S	Plastic Enclosure w/ rotary handle, compatible with MMS-32H, NEMA12/IP65, UL and CE certified, suitable for surface mounting	\$23
MGB20-10B-ST	M20, Cord Grip (IP68)	\$1.25

Plastic MMS Enclosure

- NEMA 12, IP65 rating
- Rotary handle with lockout provision
- UL and CE certified
- Available for 32 amp frame only
- M20/M25 knockouts

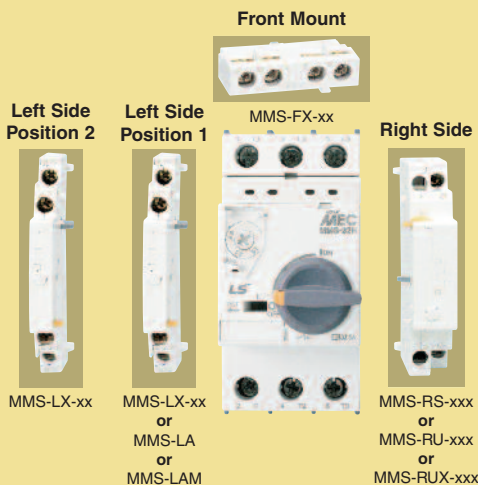


MMS-EPH32-65S

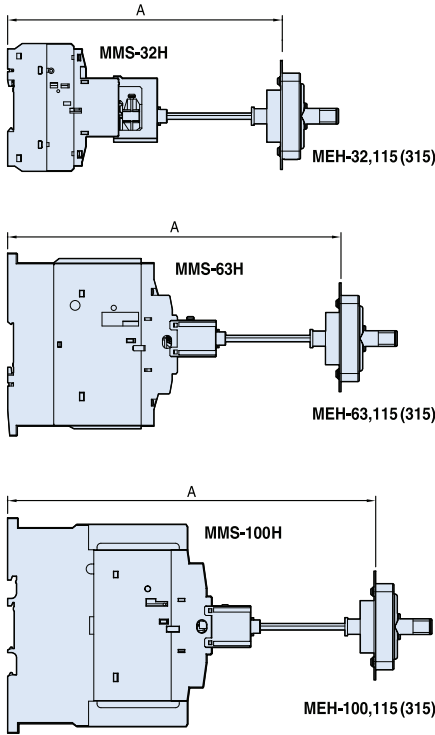


MMS Auxiliary Contact Blocks

- Front mount auxiliary blocks
- Side mount auxiliary, alarm, undervoltage, and shunt trip contact blocks

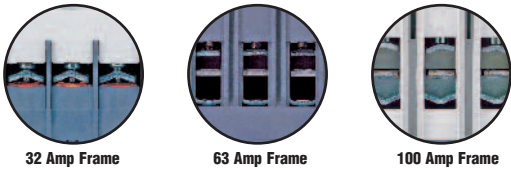


Extended Rotary Handle Dimensions



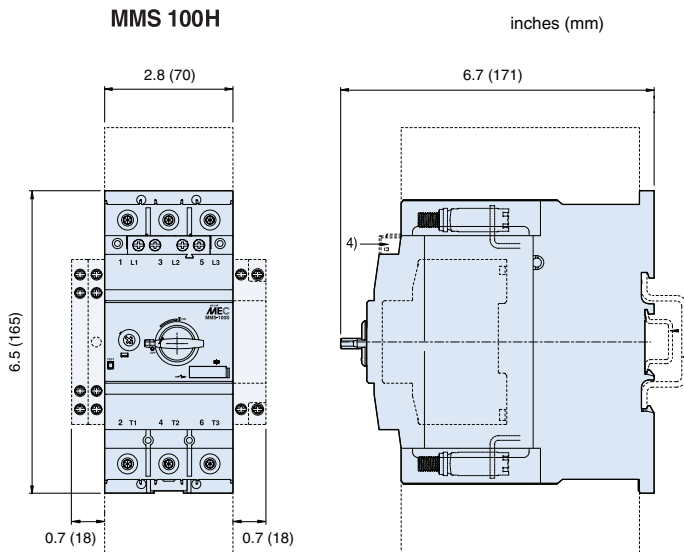
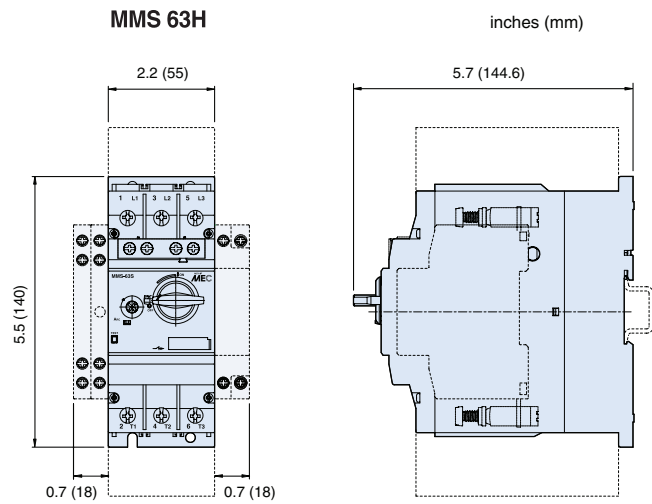
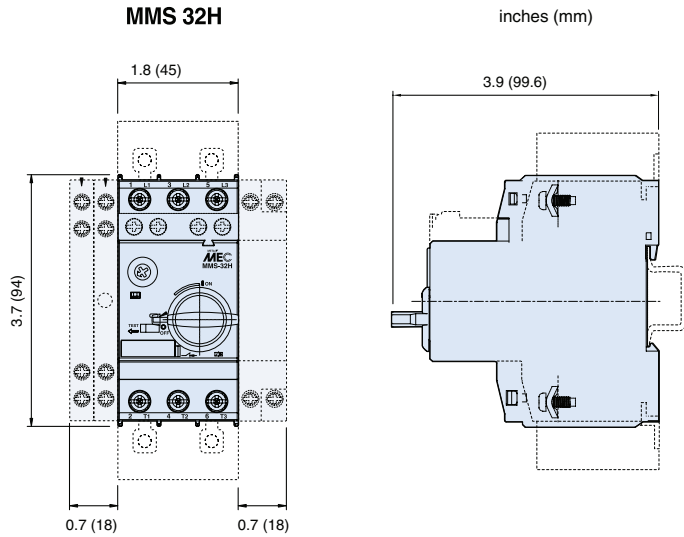
E-Handle Type	A min - max inches (mm)	MMS Type
MEH32-115	5.9 - 8.3 (148.6 - 210.6)	MMS-32H
MEH32-315	5.9 - 16.2 (148.6 - 410.6)	
MEH63-115	7.6 - 10.1 (193.6 - 255.6)	MMS-63H
MEH63-315	7.6 - 17.9 (193.6 - 455.6)	
MEH100-115	8.7 - 11.1 (220 - 282)	MMS-100H
MEH100-315	8.7 - 18.9 (220 - 482)	

MMS Terminal Specifications



Wire Type	Conductors	MMS-32H	MMS-63H	MMS-100H
Solid	1	18 - 8 AWG	18 - 2 AWG	12 - 00 AWG
	2	18 - 10 AWG	18 - 4 AWG	12 - 0 AWG
Stranded	1	18 - 10 AWG	18 - 2 AWG	12 - 00 AWG
	2	18 - 10 AWG	18 - 4 AWG	12 - 0 AWG
Flexible	1	18 - 10 AWG	18 - 4 AWG	12 - 0 AWG
	2	18 - 10 AWG	18 - 6 AWG	10 - 2 AWG
Torque		7 - 22 lb-in	26 - 39 lb-in	35 - 53 lb-in

Manual Motor Starter Dimensions



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